

APPLICATION

FOR

UNITED STATES LETTERS PATENT

FOR

BOOK FORMAT DATA PACKAGE

BY

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## **BOOK FORMAT DATA PACKAGE**

This application claims the benefit of U.S. Provisional Application No. 60/446,555 filed February 12, 2003.

### **BACKGROUND OF THE INVENTION**

Data storage devices are delicate devices that are easily damaged by scratches, dirt and other consequences of handling. As such, there is a need for carrying cases and other devices that protect compact discs, DVDs and other digital and analog media devices during transport and between uses.

Additionally, data storage devices are often used as advertising mechanisms to sell contents. Data storage devices are often displayed directly on shelves in retail stores. Attractive packaging designs provide benefits in sales at stores.

Most digital media storage devices are only capable of storing one or two discs at a time. A common media storage device is a jewel case for storing compact discs. In a jewel case, a disc fits into a plastic tray and a hinged cover snaps onto the tray to close the jewel case. Two discs may be held in a jewel case if a double-sided tray is used inside the case. However, jewel cases are not visually appealing, are difficult to open and often break. Similar problems exist with packaging for DVDs.

Methods for carrying and storage of multiple digital media discs are also unsatisfactory. Multiple disc carriers often involve bulky and hard to use media cases that allow the user to carry multiple discs at once. Most of these devices are not user-friendly and are not visually appealing.

Needs exist for improved methods for storing, protecting and displaying data storage devices in a less expensive and more visually appealing manner.

## **SUMMARY OF THE INVENTION**

The present invention is a book-like package for holding, protecting and displaying storage devices, such as, for example, trays for holding CDs and DVDs. The present invention has a book like cover with graphics printed on the one or more outer surfaces. The cover has a spine connecting a front panel to a back panel. The three sections of the cover wrap around a bottom side edge and a top of a stack of rigid plastic trays. The rigid trays are stacked and aligned to look like pages of a book. A back edge of the stack of trays is covered by the spine and in one embodiment is attached to the spine with adhesive.

The rigid plastic trays hold compact discs, DVDs, descriptive booklets and other materials on the front, back or both surfaces of each individual rigid plastic tray. The book format storage device of the present invention may have several leaves of graphics and text included in the design. The book format package can be made as large or small as needed by simply adding additional trays and increasing the corresponding width of the flexible spine. There can be between one and an infinite number of trays. Preferably, the number and thickness of the trays are limited so that the bound book is easy to hold.

The flexible spine is located between the front and back cover of the package and is the only place where the rigid trays are attached to the cover. Adhesive binder attaches the rigid trays to the flexible spine. The binder is placed where the rigid trays are to be attached to the spine of the book. The binder is then heated to about 150 C in order to set and stabilize the adhesive. After the binder has been heated, the rigid trays are permanently adhered to the spine of the book cover.

In preferred embodiments, the trays are made of clear polystyrene. The adhesive binder is a soft flexible material such as, for example, polyurethane. The polyurethane may be cured at

a temperature that facilitates its adherence to the back edges of the trays and to the material of the spine of the book.

In one preferred embodiment, the book covers are made of multiple, stiff, adhesively joined paperboard layers or bookbinders board. The layers are joined at a back edge portion by a bookbinders fabric tape that forms the spine. The inner tray edges are adhered to the inside of the spine by the flexible, cured, polymer binding. The covers are wrapped with a finish layer or book cloth, and inner surfaces of the covers are finished with glued overlayers. The result is a fine book suitable for storage and viewing on a bookshelf and suitable for repeated openings and closings when reviewing, retrieving and replacing the discs.

These and further and other objects and features of the invention are apparent in the disclosure, which includes the above and ongoing written specification, with the drawings.

### **BRIEF DESCRIPTION OF THE DRAWINGS**

Figure 1 is a perspective view of a stack of rigid trays.

Figure 2 is a perspective view of the book format package with the covers fully closed.

Figure 3 is a perspective view of the book format package with the covers partially opened.

Figure 4 is a perspective view of the book format package showing the details of the binding mechanism.

## **DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS**

The present invention is a book format package for holding compact discs, DVDs, booklets and other data storage devices. The present invention resembles a book in outward appearance but instead of paper pages, rigid plastic trays are substituted.

Figure 1 shows a stack of rigid trays 11 that act as pages in the completed book format package 13. The rigid tray 11 generally includes a central depression 15 that corresponds in shape to a data storage device 17 that is to be held. In this example, the central depression 15 is shaped to match a compact disc 17. The central depression is formed with tolerances that permit minimal movement of the compact disc 17 when it is locked in place. In the middle of the central depression 15 is a spindle 19 that fits through the central spindle hole 21 on the compact disc 17. The spindle 19 may or may not have a locking mechanism to secure the compact disc 17 on the spindle 19. Other features of the rigid tray 11 include one or more finger holds 23 that allow a user to more easily extract the digital media device 17. The shape and configuration of the elements of the rigid tray 11 may be altered to fit a wide variety of digital media devices 17 or booklets, pamphlets or other materials.

Individual rigid trays 25 sit on top of one another to form a stack of rigid trays 11. The top surface 27 of each individual tray 25 may have a beveled edge 29 that allows for easier and more secure stacking. This edge 29 fits within the walls of the next above tray and ensures that the individual trays 25 are properly aligned during stacking and that the trays 25 do not shift with respect to one another during assembly.

Figure 2 shows the book format package 13 in a fully closed position. The pages of the book is the stack 11 of individual, rigid plastic trays 25 that hold the data storage devices 17,

such as compact discs, DVDs or other devices. The front 27, back 31 or both surfaces of each rigid tray 25 are capable of holding a data storage device 17. Generally, the package 13 can be expanded to accommodate from one to an infinite number of rigid trays 25. The size of the package 13 is increased by increasing the size of a flexible spine binding 33 in relation to the number of additional individual rigid trays 25. The flexible spine binding 33 attaches to an edge 35 of the stack of rigid trays 11.

A book cover 37 attaches to the stack of rigid trays 11. The book cover 37 includes a front cover 39, a back cover 41 and the flexible spine 33. The flexible binding 33 is attached to the inside surfaces of the front cover 39 and back cover 41, or the flexible binding 33 may be sandwiched between layers of the front 39 and back 41 covers. The flexible binding 33 has a dimension similar to the edge 35 of the stack of rigid trays 11. The flexible binding 33 then becomes the spine of the package 13. The front 39 and back 41 covers of the package 13 are generally formed from multiple glued layers of bookbinders board, cardboard or other suitable materials covered with conventional bookbinding facings. The covers 39, 41 are folded around the stack of rigid trays 11 to form a package 13 with the appearance of a book. The front 39, back 41 or both covers of the package 13 may be printed with graphics, or may be composed of preprinted graphic materials. The front 39 and back 41 covers may be cut so that, when folded, one or more outer edges 43 are flush with outer edges 45 of the stack of rigid trays 11. Alternatively, the outer edges 43 of the covers 39, 41 may overhang the stack of rigid trays 11 similar to covers of a book overhanging the pages themselves.

Figure 3 shows the package 13 with the covers 39, 41 partially opened. The individual rigid trays 25 are leafed through like the pages of books. As each individual rigid tray 25 is flipped, the next individual rigid tray 25 is partially raised. This movement allows the user to

more easily grasp the next tray 25 in succession without having to try and separate individual trays 25 manually. The flipping and lifting process is repeated as the user continues through the entire package 13. Through this process, the user can easily see the data storage devices in the book and quickly flip through the entire book. When the user finds the appropriate rigid tray 25, the data storage device 17 is removed from the molded depression 15 holding it.

The individual rigid trays 25 are attached to the spine 33 of the package 13 with pliable adhesive material 47. Figure 4 shows a binding material 47 used to adhere the individual rigid trays 25 to the flexible binding 33. The binding material 47 is placed on the flexible material 33 wherever the stack of rigid trays 11 will contact the flexible material 33. The binding material 47 is then heated to about 150 C to set the adhesive material 47. When the adhesive material 47 is set, the rigid trays 25 are securely, flexibly and permanently attached to the flexible spine material 33. The package 13 is then completed and ready for use.

While the invention has been described with reference to specific embodiments, modifications and variations of the invention may be constructed without departing from the scope of the invention.